Sample Fraser's ISAT Exam

Critical Reasoning Section

Stem 1 - The Old Lighthouse

For centuries, the lighthouse stood firm against the unrelenting waves, its beacon slicing through the darkness to guide weary sailors to safety. Built from stone quarried from the nearby cliffs, it had endured tempests, wars, and the silent erosion of time.

Yet, in the modern age, its purpose seemed diminished. New navigation technologies, satellite positioning, and automated systems had made such structures nearly obsolete. The town's council debated its fate: should it be demolished, preserved as a historical landmark, or repurposed? Some saw it as a relic of a bygone era, a costly monument to nostalgia. Others viewed it as an enduring testament to human resilience, a symbol of protection and stability in an uncertain world.

Despite its questionable utility, the lighthouse continued to stand, its light still flickering at night—not because it was needed, but because to extinguish it seemed unthinkable.

Q1. Which of the following best describes the contrast between the first and second paragraphs?

In the first paragraph, the lighthouse is presented as...	**In the second paragraph, the lighthouse is presented as...**
A. An imposing force of nature.	A fragile remnant of the past.
B. A reliable source of safety.	A contested piece of history.
C. An outdated structure.	A cherished landmark.
D. A fading light of hope.	A modern engineering failure.

Q2. The phrase *"a costly monument to nostalgia"* suggests that some townspeople view the lighthouse as:

A. An unnecessary financial burden.

B. A sentimental yet essential part of history.

C. A structure too dangerous to maintain.

D. An outdated but still functional tool.

Q3. The lighthouse's continued operation despite advancements in navigation technology primarily reflects:

A. The reluctance to let go of tradition.

B. The need for an emergency backup system.

C. The town's lack of resources to dismantle it.

D. A misguided belief in its effectiveness.

Q4. As a whole, the passage implies that the lighthouse:

A. Is a relic that no longer serves any real purpose.

B. Represents the tension between progress and preservation.

C. Has become a symbol of the town's financial mismanagement.

D. Is a historical curiosity that will inevitably be forgotten.

Q5. The tone of the final sentence (*"Despite its questionable utility, the lighthouse continued to stand, its light still flickering at night—not because it was needed, but because to extinguish it seemed unthinkable."*) conveys a sense of:

A. Resignation and inevitability.

B. Determination and defiance.

C. Nostalgia and reluctance.

D. Indifference and detachment.

Stem 2 - The Old Forest

Deep within the heart of the old forest, towering trees cast long shadows, and the air is thick with the scent of damp earth. Ancient oaks stand tall, their branches entwined in a silent embrace, weaving a canopy so dense that little sunlight reaches the forest floor. The forest is alive with the hum of insects, the rustling of leaves, and the occasional call of distant birds. Some claim the

forest holds secrets, hidden away for centuries, and that the trees themselves have witnessed the rise and fall of entire civilizations.

For those brave enough to venture beyond the well-trodden paths, the forest can be a place of both beauty and danger. Thick undergrowth makes passage difficult, and darkened corners seem to whisper of things long forgotten. Yet, there are those who believe the forest possesses a certain magic, a power that can be harnessed by those with the knowledge and respect to do so. The elders in the nearby village speak in hushed tones of the forest's deep roots and its ancient, almost mystical energy.

But not all who enter the forest leave unchanged. It is said that the trees have the power to alter one's destiny, to guide them toward untold wisdom or peril. Some return with stories of strange visions, while others simply disappear, leaving no trace behind.

Q1. In the first paragraph, the forest is described as:

A. A place of danger and uncertainty.

B. A symbol of beauty and tranquillity.

C. A sanctuary offering respite from civilisation.

D. A witness to history and change.

Q2. The second paragraph suggests that the forest's power is:

A. Accessible only through scientific exploration.

B. A dangerous force that should be avoided.

C. Only available to those who understand and respect it.

D. A myth with no real impact.

Q3. The mention of "strange visions" and people who "disappear" suggests that the forest has:

A. A mystical and unpredictable influence.

B. A calming effect on those who enter.

C. A predictable, logical environment.

D. A tendency to distort reality with no consequences.

Q4. The phrase "darkened corners seem to whisper of things long forgotten" most likely refers to:

A. The memories of ancient civilisations that once thrived there.

B. The forest's role as a natural habitat for rare species.

C. The mysterious powers of the forest that can be learned.

D. The possibility of new discoveries for modern explorers.

Q5. The tone of the passage as a whole can be best described as:

A. Nostalgic and melancholy.

B. Wondrous and foreboding.

C. Hopeful and uplifting.

D. Neutral and factual.

↘ Quantitative Reasoning Section

Stem 1 - The Human Circulatory System

The human circulatory system is responsible for transporting oxygen, nutrients, and waste products throughout the body. Blood circulates through a network of arteries, veins, and capillaries, driven by the pumping action of the heart. The table below provides data on the average heart rate, blood volume, and circulation time for different mammals, including humans.

Mammal	Average Heart Rate (beats per minute)	Total Blood Volume (litres)	Time for One Complete Circulation (seconds)
Human	72	5.0	60
Elephant	30	250	250
Dog	90	1.2	15
Mouse	600	0.002	3
Horse	40	50	120

Additional information:

- A complete circulation is the time it takes for all blood in the body to travel through the heart and return to its starting point.
- The higher the heart rate, the faster blood circulates in the body.

- Blood volume is proportional to body size.

Q1. Which of the following statements is best supported by the data?

A. Mammals with larger blood volumes tend to have faster circulation times.

B. Smaller mammals generally have higher heart rates than larger mammals.

C. A higher heart rate always results in a larger blood volume.

D. Circulation time is directly proportional to heart rate.

Q2. If an elephant's heart were to beat at double its normal rate, what would likely happen to its circulation time?

A. It would remain the same.

B. It would decrease by half.

C. It would double.

D. It would decrease by one-fourth.

Q3. If a horse's blood volume were reduced by half due to dehydration, which of the following would most likely be affected?

A. The horse's heart rate would decrease.

B. The circulation time would increase.

C. The blood volume would not impact circulation time.

D. The horse's heart would stop.

Q4. A veterinarian measures a dog's circulation time and finds it to be 20 seconds instead of 15. What could be a possible reason for this?

A. The dog is experiencing dehydration, slowing blood circulation.

B. The dog's heart rate has increased significantly.

C. The dog's total blood volume has doubled.

D. The dog's body temperature has dramatically decreased.

Q5. Based on the data, what is the approximate ratio of a mouse's heart rate to an elephant's?

A. 10:1

B. 20:1

C. 30:1

D. 50:1

Stem 2 - Speed and Distance in Cycling Races

A group of cyclists is participating in a long-distance cycling race. The table below shows information about their speeds and the distances they have traveled at different checkpoints.

Table: Cyclists' Speeds and Distances

Cyclist	Average Speed (km/h)	Distance Traveled (km)
Alice	25	100
Ben	30	120
Carlos	20	80
Diana	28	112

Additional Information:

- The race started at **8:00 AM**.
- Each cyclist maintains a constant speed throughout the race.
- The total race distance is **150 km**.

Q1. If Ben maintains his speed, how much time will he need to complete the entire race?

A. 4 hours

B. 5 hours

C. 6 hours

D. 5.5 hours

Q2. If Carlos continues at the same speed, at what time will he finish the race?

A. 12:30 PM

B. 1:00 PM

C. 2:00 PM

D. 3:00 PM

Q3. How much distance does Diana still need to travel before completing the race?

A. 28 km

B. 32 km

C. 38 km

D. 40 km

Q4. If Alice increases her speed by 5 km/h for the remainder of the race, how much time will she need to complete the remaining 50 km?

A. 1 hour

B. 1.5 hours

C. 2 hours

D. 2.5 hours

Q5. Which cyclist will take the longest time to complete the full race?

A. Alice

B. Ben

C. Carlos

D. Diana

↘ Answer Sheet & Explanation

Critical Reasoning

Stem 1 - The Old Lighthouse

Q1. B

Explanation:

In the first paragraph, the lighthouse is described as having withstood storms, wars, and time itself, highlighting its reliability and historical role in ensuring safety. In contrast, the second paragraph focuses on how the lighthouse's function has become obsolete in the modern era, sparking debates about its relevance. It is no longer simply a guiding light but a symbol that different groups interpret in various ways—some seeing it as a historical landmark, others as an unnecessary expense. This contrast is best captured by **"a reliable source of safety" vs. "a contested piece of history."**

Q2. A

Explanation:

The phrase *"a costly monument to nostalgia"* implies that some view the lighthouse as merely a sentimental relic from the past rather than something with practical value. The use of "costly"

suggests that its maintenance requires financial resources that might be better spent elsewhere, reinforcing the idea that some see it as a **financial burden** rather than a necessity. While option B suggests that it is still essential, the phrase “costly monument” leans more toward viewing it as unnecessary rather than indispensable.

Q3. A

Explanation:

The passage notes that the lighthouse is no longer *needed* for navigation due to modern technology, yet it continues to function because turning it off "seemed unthinkable." This suggests that its operation is driven more by tradition, symbolism, and emotional attachment rather than practical necessity. Option B is incorrect because there is no mention of using the lighthouse as a backup system. Option C is also incorrect because financial burden is discussed in the second paragraph, but there is no explicit statement that dismantling it is impossible. Option D is misleading because the passage does not suggest that people wrongly believe it is still essential—rather, they keep it running out of respect for its legacy.

Q4. B

Explanation:

The passage presents a conflict between technological progress and historical preservation. While modern navigation systems have rendered the lighthouse obsolete, it remains standing because people struggle to let go of its historical and symbolic value. This dynamic best reflects the **tension between progress and preservation**, making option B the most accurate choice.

- Option A is too extreme—while its function has diminished, the lighthouse still holds symbolic significance.
- Option C is incorrect because financial mismanagement is not a major focus of the passage.
- Option D is incorrect because the passage suggests that people continue to care about the lighthouse, making it unlikely that it will simply be forgotten.

Q5. C

Explanation:

The phrase *"not because it was needed, but because to extinguish it seemed unthinkable"* suggests that the lighthouse is being maintained due to emotional attachment rather than practical necessity. This conveys nostalgia—a longing for what it represents—and reluctance to let go of the past.

- Option A (Resignation and inevitability) is incorrect because the town is not passively accepting the lighthouse’s fate; instead, they actively keep it running.
- Option B (Determination and defiance) is incorrect because the tone is not one of resistance or struggle, but rather quiet sentimentality.
- Option D (Indifference and detachment) is incorrect because the passage suggests the opposite—people care deeply about the lighthouse’s existence.

Stem 2 - The Old Forest

Q1. D

Explanation: The passage mentions that the forest "has witnessed the rise and fall of entire civilisations," emphasising its historical significance. This makes the forest not just a natural place, but also a **witness to history and change**.

Q2. C

Explanation: The second paragraph states that the forest possesses power "that can be harnessed by those with the knowledge and respect to do so." This indicates that understanding and respect are key to accessing the forest's power.

Q3. A

Explanation: The passage describes "strange visions" and people who "disappear," both of which indicate a mystical, unpredictable influence over those who enter the forest. The forest's effect on people is far from ordinary or calming.

Q4. A

Explanation: The phrase evokes a sense of mystery and history, implying that the forest holds memories of the past—particularly "things long forgotten." This suggests the memories of ancient civilisations, which is consistent with the earlier reference to the forest witnessing history.

Q5. B

Explanation: The passage is filled with both awe and apprehension, as it describes the forest's beauty and magic, while also hinting at its danger and unpredictability. Words like "danger," "strange visions," and "disappear" contribute to a **wondrous and foreboding** tone.

Quantitative Reasoning

Stem 1 - The Human Circulatory System

Q1. B

Explanation: The data shows that smaller mammals (such as the mouse and dog) have significantly higher heart rates than larger mammals (such as the elephant and horse). The other options are incorrect because circulation time is not directly proportional to heart rate, and a higher heart rate does not necessarily correspond to a larger blood volume.

Q2. B

Explanation: The table suggests that a higher heart rate leads to a faster circulation time. If the elephant's heart rate doubled from 30 bpm to 60 bpm, its circulation time would likely **halve** from 250 seconds to 125 seconds.

Q3. B

Explanation: Reduced blood volume makes it harder for the circulatory system to distribute oxygen and nutrients efficiently, leading to a longer circulation time. The heart rate would likely

increase, not decrease, to compensate for the lower blood volume.

Q4. A

Explanation: Dehydration reduces blood volume, making circulation less efficient and causing an increase in circulation time. A significantly increased heart rate would have the opposite effect, making circulation faster.

Q5. B

Explanation: The mouse's heart rate is 600 bpm, while the elephant's heart rate is 30 bpm. The ratio is:

600/30 = 20:1

Stem 2 - Speed and Distance in Cycling Races

Q1. B

Explanation:

- Time = Distance ÷ Speed
- Total race distance = **150 km**, Ben's speed = **30 km/h**
- Time required = **150 ÷ 30 = 5 hours**

Q2. C

Explanation:

- Carlos' speed = **20 km/h**
- Time required to complete **150 km** = **150 ÷ 20 = 7.5 hours**
- Since the race started at **8:00 AM**, Carlos will finish at **8:00 + 7.5 hours = 3:30 PM**

Q3. B

Explanation:

- Total race distance = **150 km**
- Distance Diana has already traveled = **112 km**
- Remaining distance = **150 - 112 = 38 km**

Q4. C

Explanation:

- Alice's **new speed** = **25 + 5 = 30 km/h**
- Time required to travel remaining **50 km** = **50 ÷ 30 = 1.67 hours**
- **Approximately 2 hours**

Q5. C

Explanation:

- Total race distance = **150 km**
- Time required:
  - **Alice:** 150÷25=6 hours
  - 150÷25=6150 ÷ 25 = 6
  - **Ben:** 150÷30=5 hours
  - 150÷30=5150 ÷ 30 = 5
  - **Carlos:** 150÷20=7.5 hours
  - 150÷20=7.5150 ÷ 20 = 7.5
  - **Diana:** 150÷28=5.36 hours
  - 150÷28=5.36150 ÷ 28 = 5.36

Carlos takes the longest time (**7.5 hours**) to complete the race.